**ecology and environment, inc.**

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

**MEMORANDUM**

DATE: April 14, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle

FROM: James Herndon, Chemist, E&E, Seattle
Andrew Hafferty, Senior Chemist, E&E, Seattle

SUBJ: QA of Case 8955 (Inorganics)
Spokane Junkyard

TDD: F10-8802-07

CC: Raleigh Farlow, ESD-DPO, USEPA, Region X
Gerald Muth, DPO, USEPA, Region X, Laboratory
Deborah Szaro, ESD-DPO, USEPA, Region I
Deborah Flood, HWD-SM, USEPA, Region X
Joseph Hunt, PM, E&E, Seattle

The Quality Assurance review of 20 samples, Case 8955, collected from Spokane Junkyard, has been completed. The 20 soil samples were analyzed at low level for TCL inorganics by Thermo Analytical Inc. of Waltham, MA. The samples were numbered:

| EPA Number | Lab Number | EPA Number | Lab Number |
|---|---|---|---|
| MJB-608 | 02019-10s | MJB-682 | 02019-20s |
| MJB-609 | 02019-11s | MJB-698 | 02019-01s |
| MJB-610 | 02019-12s | MJB-699 | 02019-02s |
| MJB-615 | 02019-13s | MJB-730 | 02019-03s |
| MJB-672 | 02019-14s | MJB-731 | 02019-04s |
| MJB-673 | 02019-15s | MJB-732 | 02019-05s |
| MJB-674 | 02019-16s | MJB-733 | 02019-06s |
| MJB-675 | 02019-17s | MJB-743 | 02019-07s |
| MJB-676 | 02019-18s | MJB-744 | 02019-08s |
| MJB-681 | 02019-19s | MJB-745 | 02019-09s |

1.9.4.3
31114

USEPA SF
1025428

recycled paper

## Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control specifications outlined in IFB WA 87-K-025, IFB WA 87-K-026 and IFB WA 87-K-027.

1) Timeliness - Acceptable

| Sample Number | Sample Date | Recd. Date | ICP Prep. | ICP Anal. | AA Prep. | AA Anal. | Hg Anal. |
|---|---|---|---|---|---|---|---|
| MJB-608 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-609 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-610 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-615 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-672 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-673 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-674 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-675 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-676 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-681 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-682 | 02/10 | 02/13 | 02/22 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-698 | 02/09 | 02/11 | 02/23 | 03/09 | 02/23 | 03/11-16 | 02/28 |
| MJB-699 | 02/09 | 02/11 | 02/23 | 03/09 | 02/23 | 03/11-16 | 02/28 |
| MJB-730 | 02/09 | 02/11 | 02/23 | 03/09 | 02/23 | 03/11-16 | 02/28 |
| MJB-731 | 02/09 | 02/11 | 02/23 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-732 | 02/09 | 02/11 | 02/23 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-733 | 02/09 | 02/11 | 02/23 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-743 | 02/09 | 02/11 | 02/23 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-744 | 02/09 | 02/11 | 02/23 | 03/09 | 02/22 | 03/11-16 | 02/25 |
| MJB-745 | 02/09 | 02/11 | 02/23 | 03/09 | 02/22 | 03/11-16 | 02/25 |

All holding times met contract required limits.

2) Initial Calibration - Acceptable

The Initial Calibration Verification (ICV) standard was run two times. The first run had an unacceptable value for Antimony. The value used in the Initial Calibration form was taken from a second Initial Calibration Verification standard containing only Antimony.

The values on the raw data ICV standard for Selenium and Arsenic run by furnace AA were hand written values 25% larger than the machine generated values. No explanation for the increased values was given.

3) Continuing Calibration - Acceptable

All ICP and Graphite Furnace Continuing Calibration Verification (CCV) standards met requirements for frequency and percent recovery for all metals.

4) Instrument Detection Limits - Acceptable

Instrument Detection Limits (IDL) met Contract Required Detection Limits (CRDL) for all metals.

5) Blanks - Acceptable

Negative values were enter on the Blank form and flagged incorrectly as being between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL). The values have been treated as detection limit values in those cases.

The following elements were found in the Preparation Blank:

| Element | Concentration |
|---|---|
| Aluminum | 5.86 ppm |
| Beryllium | 0.18 ppm |
| Sodium | 40.68 ppm |

The values reported for Aluminum, Beryllium and Sodium were greater than the Instrument Detection Limit (IDL) but less than the Contract Required Detection Limit (CRDL). No flagging of the data reports was necessary.

6) ICP Interference Check - Acceptable

The Interference Check elements met contract required limits for recovery.

7) Laboratory Control Sample - Acceptable

The Percent Recovery (%R) for all elements in the Laboratory Control Sample (LCS) for soil were within the contract required control limits.

The acceptable range for recovery of Thallium was incorrectly entered as "24.6" to "0". The "0" value might be a transcription error. No action was necessary.

8) Duplicate Sample Analysis - Acceptable

The following element at concentrations five times greater than the Contract Required Detection Limit (CRDL) had Relative Percent Difference (RPD) values greater than 35%. Elements at concentrations less than five times the Contract Required Detection Limit (CRDL) had Relative Percent Difference (RPD) within the ± CRDL limit.

| Sample | Matrix | Element | RPD | QC Limits |
|---|---|---|---|---|
| MJB-698 | Soil | Copper | 168% | 35 % |

RPD = Relative Percent Difference
QC Limit = 35% if sample is greater than 5 times CRDL (soil)

Positive values for Copper have been flagged "J" (estimated) for all samples.

The soil Duplicate sample analysis had Lead and Chromium flagged as exceeding the contract required limits for Relative Percent Difference (RPD). Neither of the these elements had a RPD greater than 35%. The flags for the two elements have been removed from all sample reports.

No sample number was given on the Duplicate analysis report form. The sample number should have been MJB-698. No action was required.

9) Spiked Sample Analysis

The Percent Recovery (%R) for Lead, Selenium, Silver, Thallium and Zinc were outside of contract required QC limits.

| Sample | Matrix | Element | %R | QC Limits |
|---|---|---|---|---|
| MJB-699 | Soil | Lead | 166.1 | 75 - 125% |
| MJB-699 | Soil | Selenium | 32.6 | 75 - 125% |
| MJB-699 | Soil | Silver | 49.0 | 75 - 125% |
| MJB-699 | Soil | Thallium | 28.4 | 75 - 125% |
| MJB-699 | Soil | Zinc | 219.2 | 75 - 125% |

%R = Percent Recovery

Percent Recovery (%R) for Lead and Zinc was greater than 125%. Positive results for Lead and Zinc have been flagged "J" (estimated) for all samples.

Percent Recovery (%R) for Selenium and Silver was less than 75%. Positive results for Selenium and Silver have been flagged "J" (estimated) and detection limits flagged "UJ" (undetected, estimated quantitation limit) for all samples.

Percent Recovery (%R) for Thallium was less than 30%. Positive results for Thallium have been flagged "J" (estimated) and detection limits flagged "UR" (undetected, rejected quantitation limit) for all samples.

10) ICP Serial Dilution - Acceptable

The Percent Difference (%D) for all elements in the serial dilution were less than 10% and met the contract required QC limit. No action was necessary.

11) Furnace AA - Acceptable

The sequence for sample and analytical spike analysis was within contract requirements for Relative Percent Difference for duplicate analytical analysis and Spike Recoveries for spikes at twice the Contract Required Detection Limit.

Method of Standard Addition (MSA) Analysis

Arsenic analyses for samples MJB-672 and MJB-733 were done by the Method of Standard Addition and did not meet the contract required 0.9950 Correlation Coefficient (r) requirement.

| Sample | Element | r | QC Limit |
|---|---|---|---|
| MJB-672 | Arsenic | 0.9855 | 0.9950 |
| MJB-733 | Arsenic | 0.9856 | 0.9950 |

r = Correlation Coefficient

Positive results for Arsenic have been flagged "J" (estimated) in samples MJB-672 and MJB-733.

The values listed on the Standard Addition form (form 8AA) for the spiking amount were not consistent with the values specified in the contract. Samples MJB-608, MJB-675 and MJB-676 were spiked at twice the concentration required. No explanation was given for the modification. No action was taken.

12) Mercury Analysis - Acceptable

Mercury analyses met all contract requirements for frequency of quality control and analytical sequence.

13) Cyanide Analysis

Cyanide analysis was not requested for this sample set.

14) Sample Analysis - Acceptable

15) Laboratory Contact

No contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is an estimated sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or concentrations reported were less than the CRQL.

R - Quality Control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.

Q - No analytical result.

N - Presumptive evidence of presence of material (tentative identification).

B - The compound was found in the laboratory blank as well as the sample.

M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.

F - Concentration of this compound exceeds either the primary or secondary drinking water standard listed in the Safe Drinking Water Act of 1974.

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB698

Lab Name: SKINNER & SHERMAN LABS. Contract: 62-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-01S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 51.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 17600.00 | | | |
| 7440-36-0 | Antimony | 6.70 | J | | |
| 7440-38-2 | Arsenic | 10.70 | | | |
| 7440-39-3 | Barium | 268.00 | | | |
| 7440-41-7 | Beryllium | 0.83 | J | | |
| 7440-41-7 | Cadmium | 1.80 | | | |
| 7440-70-2 | Calcium | 6360.00 | | | |
| 7440-47-3 | Chromium | 31.60 | | | |
| 7440-48-4 | Cobalt | 10.30 | J | | |
| 7440-50-8 | Copper | 2130.00 | J | | |
| 7439-89-6 | Iron | 38800.00 | | | |
| 7439-92-1 | Lead | 392.00 | J | | |
| 7439-95-4 | Magnesium | 5040.00 | | | |
| 7439-96-5 | Manganese | 678.00 | | | |
| 7439-97-6 | Mercury | 0.19 | U | | |
| 7440-02-0 | Nickel | 27.70 | | | |
| 7440-09-7 | Potassium | 2600.00 | | | |
| 7782-49-2 | Selenium | 0.63 | UJ | | |
| 7440-22-4 | Silver | 2.10 | UJ | | |
| 7440-23-5 | Sodium | 496.00 | J | | |
| 7440-28-0 | Thallium | 0.69 | UR | | |
| 7440-62-2 | Vanadium | 31.30 | | | |
| 7440-66-6 | Zinc | 1090.00 | J | | |
| | Cyanide | | | | |

Color Before: BROWN Clarity Before: _____ Texture: FINE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

LARGE STONES, GRASS AND ROOTS

0002

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB699

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-02S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 55.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 19800.00 | | | |
| 7440-36-0 | Antimony | 6.00 | U | | |
| 7440-38-2 | Arsenic | 7.80 | | | |
| 7440-39-3 | Barium | 353.00 | | | |
| 7440-41-7 | Beryllium | 1.10 | J | | |
| 7440-41-7 | Cadmium | 2.00 | | | |
| 7440-70-2 | Calcium | 10500.00 | | | |
| 7440-47-3 | Chromium | 31.10 | | | |
| 7440-48-4 | Cobalt | 10.20 | J | | |
| 7440-50-8 | Copper | 52.40 | J | | |
| 7439-89-6 | Iron | 35100.00 | | | |
| 7439-92-1 | Lead | 272.00 | J | | |
| 7439-95-4 | Magnesium | 4690.00 | | | |
| 7439-96-5 | Manganese | 310.00 | | | |
| 7439-97-6 | Mercury | 0.15 | U | | |
| 7440-02-0 | Nickel | 27.00 | | | |
| 7440-09-7 | Potassium | 4210.00 | | | |
| 7782-49-2 | Selenium | 0.51 | UJ | | |
| 7440-22-4 | Silver | 2.40 | UJ | | |
| 7440-23-5 | Sodium | 468.00 | J | | |
| 7440-28-0 | Thallium | 0.56 | UR | | |
| 7440-62-2 | Vanadium | 37.50 | | | |
| 7440-66-6 | Zinc | 564.00 | J | | |
| | Cyanide | | | | |

JEH 4/14/88

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

LARGE STONES, GRASS AND ROOTS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB730

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-03S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 46.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 24200.00 | | | |
| 7440-36-0 | Antimony | 7.70 | J | | |
| 7440-38-2 | Arsenic | 8.40 | | | |
| 7440-39-3 | Barium | 233.00 | | | |
| 7440-41-7 | Beryllium | 1.40 | J | | |
| 7440-41-7 | Cadmium | 1.00 | U | | |
| 7440-70-2 | Calcium | 6860.00 | | | |
| 7440-47-3 | Chromium | 49.20 | | | |
| 7440-48-4 | Cobalt | 12.60 | J | | |
| 7440-50-8 | Copper | 126.00 | J | | |
| 7439-89-6 | Iron | 31500.00 | | | |
| 7439-92-1 | Lead | 202.00 | J | | |
| 7439-95-4 | Magnesium | 6060.00 | | | |
| 7439-96-5 | Manganese | 712.00 | | | |
| 7439-97-6 | Mercury | 0.18 | U | | |
| 7440-02-0 | Nickel | 21.60 | | | |
| 7440-09-7 | Potassium | 3670.00 | | | |
| 7782-49-2 | Selenium | 0.53 | UJ | | |
| 7440-22-4 | Silver | 3.10 | UJ | | |
| 7440-23-5 | Sodium | 395.00 | J | | |
| 7440-28-0 | Thallium | 3.50 | J | | |
| 7440-62-2 | Vanadium | 42.20 | | | |
| 7440-66-6 | Zinc | 228.00 | J | | |
| | Cyanide | | | | |

4/14/88

Color Before: BROWN Clarity Before: _____ Texture: FINE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

STONES AND ROOTS

00004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB731

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-04S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 85.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 11500.00 | | | |
| 7440-36-0 | Antimony | 54.90 | | | |
| 7440-38-2 | Arsenic | 25.30 | | | |
| 7440-39-3 | Barium | 329.00 | | | |
| 7440-41-7 | Beryllium | 0.61 | J | | |
| 7440-41-7 | Cadmium | 24.90 | | | |
| 7440-70-2 | Calcium | 5700.00 | | | |
| 7440-47-3 | Chromium | 103.00 | | | |
| 7440-48-4 | Cobalt | 39.00 | | | |
| 7440-50-8 | Copper | 1130.00 | J | | |
| 7439-89-6 | Iron | | | | |
| 7439-92-1 | Lead | 3730.00 | J | | |
| 7439-95-4 | Magnesium | 3790.00 | | | |
| 7439-96-5 | Manganese | 1310.00 | | | |
| 7439-97-6 | Mercury | 0.30 | | | |
| 7440-02-0 | Nickel | 121.00 | | | |
| 7440-09-7 | Potassium | 1340.00 | | | |
| 7782-49-2 | Selenium | 0.36 | UJ | | |
| 7440-22-4 | Silver | 1.20 | UJ | | |
| 7440-23-5 | Sodium | 1530.00 | | | |
| 7440-28-0 | Thallium | 1.50 | UR | | |
| 7440-62-2 | Vanadium | 18.30 | | | |
| 7440-66-6 | Zinc | 3240.00 | J | | |
| | Cyanide | | | | |

JCH 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

SMALL STONES AND ROOTS

00015

U.S. EPA - CLP

I

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB732

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-05S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 69.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 19700.00 | | | |
| 7440-36-0 | Antimony | 6.90 | J | | |
| 7440-38-2 | Arsenic | 10.80 | | | |
| 7440-39-3 | Barium | 305.00 | | | |
| 7440-41-7 | Beryllium | 1.20 | | | |
| 7440-41-7 | Cadmium | 3.50 | | | |
| 7440-70-2 | Calcium | 7670.00 | | | |
| 7440-47-3 | Chromium | 45.60 | | | |
| 7440-48-4 | Cobalt | 15.00 | | | |
| 7440-50-8 | Copper | 219.00 | J | | |
| 7439-89-6 | Iron | 61300.00 | | | |
| 7439-92-1 | Lead | 516.00 | J | | |
| 7439-95-4 | Magnesium | 5780.00 | | | |
| 7439-96-5 | Manganese | 687.00 | | | |
| 7439-97-6 | Mercury | 0.23 | | | |
| 7440-02-0 | Nickel | 33.50 | | | |
| 7440-09-7 | Potassium | 3130.00 | | | |
| 7782-49-2 | Selenium | 0.78 | J | | |
| 7440-22-4 | Silver | 1.80 | UJ | | |
| 7440-23-5 | Sodium | 605.00 | J | | |
| 7440-28-0 | Thallium | 2.50 | UR | | |
| 7440-62-2 | Vanadium | 33.60 | | | |
| 7440-66-6 | Zinc | 2020.00 | J | | |
| | Cyanide | | | | |

gsH 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

SMALL STONES, GRASS AND ROOTS

0006

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB733

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-06S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 69.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 13000.00 | | | |
| 7440-36-0 | Antimony | 11.40 | J | | |
| 7440-38-2 | Arsenic | 11.30 | J | | |
| 7440-39-3 | Barium | 384.00 | | | |
| 7440-41-7 | Beryllium | 0.79 | J | | |
| 7440-41-7 | Cadmium | 3.30 | | | |
| 7440-70-2 | Calcium | 4690.00 | | | |
| 7440-47-3 | Chromium | 32.00 | | | |
| 7440-48-4 | Cobalt | 10.60 | | | |
| 7440-50-8 | Copper | 110.00 | J | | |
| 7439-89-6 | Iron | 66600.00 | | | |
| 7439-92-1 | Lead | 4200.00 | J | | |
| 7439-95-4 | Magnesium | 4950.00 | | | |
| 7439-96-5 | Manganese | 507.00 | | | |
| 7439-97-6 | Mercury | 0.22 | | | |
| 7440-02-0 | Nickel | 55.00 | | | |
| 7440-09-7 | Potassium | 1870.00 | | | |
| 7782-49-2 | Selenium | 0.41 | UJ | | |
| 7440-22-4 | Silver | 1.30 | UJ | | |
| 7440-23-5 | Sodium | 392.00 | J | | |
| 7440-28-0 | Thallium | 2.30 | UR | | |
| 7440-62-2 | Vanadium | 72.30 | | | |
| 7440-66-6 | Zinc | 1340.00 | J | | |
| | Cyanide | | | | |

JEH 4/14/88

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

SMALL STONES, GRASS AND ROOTS

00007

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB743

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-07S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 51.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15600.00 | | | |
| 7440-36-0 | Antimony | 6.40 | J | | |
| 7440-38-2 | Arsenic | 7.20 | | | |
| 7440-39-3 | Barium | 264.00 | | | |
| 7440-41-7 | Beryllium | 0.81 | J | | |
| 7440-41-7 | Cadmium | 2.20 | | | |
| 7440-70-2 | Calcium | 9990.00 | | | |
| 7440-47-3 | Chromium | 20.80 | | | |
| 7440-48-4 | Cobalt | 7.80 | J | | |
| 7440-50-8 | Copper | 62.90 | J | | |
| 7439-89-6 | Iron | 23800.00 | | | |
| 7439-92-1 | Lead | 256.00 | J | | |
| 7439-95-4 | Magnesium | 4800.00 | | | |
| 7439-96-5 | Manganese | 698.00 | | | |
| 7439-97-6 | Mercury | 0.16 | U | | |
| 7440-02-0 | Nickel | 16.20 | | | |
| 7440-09-7 | Potassium | 2960.00 | | | |
| 7782-49-2 | Selenium | 0.55 | UJ | | |
| 7440-22-4 | Silver | 2.40 | UJ | | |
| 7440-23-5 | Sodium | 327.00 | J | | |
| 7440-28-0 | Thallium | 3.00 | UR | | |
| 7440-62-2 | Vanadium | 29.20 | | | |
| 7440-66-6 | Zinc | 423.00 | J | | |
| | Cyanide | | | | |

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

00008

SMALL STONES, GRASS AND ROOTS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB744

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-08S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 69.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 14700.00 | | | |
| 7440-36-0 | Antimony | 51.70 | | | |
| 7440-38-2 | Arsenic | 21.80 | | | |
| 7440-39-3 | Barium | 2390.00 | | | |
| 7440-41-7 | Beryllium | 0.77 | J | | |
| 7440-41-7 | Cadmium | 29.20 | | | |
| 7440-70-2 | Calcium | 9720.00 | | | |
| 7440-47-3 | Chromium | 116.00 | | | |
| 7440-48-4 | Cobalt | 17.40 | | | |
| 7440-50-8 | Copper | 3160.00 | J | | |
| 7439-89-6 | Iron | 207000.00 | | | |
| 7439-92-1 | Lead | 15400.00 | J | | |
| 7439-95-4 | Magnesium | 4060.00 | | | |
| 7439-96-5 | Manganese | 1120.00 | | | |
| 7439-97-6 | Mercury | 24.00 | | | |
| 7440-02-0 | Nickel | 137.00 | | | |
| 7440-09-7 | Potassium | 1260.00 | | | |
| 7782-49-2 | Selenium | 0.38 | UJ | | |
| 7440-22-4 | Silver | 1.80 | UJ | | |
| 7440-23-5 | Sodium | 1180.00 | | | |
| 7440-28-0 | Thallium | 2.10 | J | | |
| 7440-62-2 | Vanadium | 47.10 | | | |
| 7440-66-6 | Zinc | 65800.00 | J | | |
| | Cyanide | | | | |

Color Before: BROWN Clarity Before: _____ Texture: FINE

Color After: BROWN Clarity After: _____ Artifacts: NO

Comments:

LARGE STONES

00029

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB745

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-09S

Level (low/med): LOW Date Received: 02/11/88

% Solids: 41.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 19300.00 | | | |
| 7440-36-0 | Antimony | 9.60 | J | | |
| 7440-38-2 | Arsenic | 7.90 | | | |
| 7440-39-3 | Barium | 375.00 | | | |
| 7440-41-7 | Beryllium | 1.10 | J | | |
| 7440-41-7 | Cadmium | 5.00 | | | |
| 7440-70-2 | Calcium | 8610.00 | | | |
| 7440-47-3 | Chromium | 54.20 | | | |
| 7440-48-4 | Cobalt | 10.30 | J | | |
| 7440-50-8 | Copper | 120.00 | J | | |
| 7439-89-6 | Iron | 34700.00 | | | |
| 7439-92-1 | Lead | 979.00 | J | | |
| 7439-95-4 | Magnesium | 4520.00 | | | |
| 7439-96-5 | Manganese | 922.00 | | | |
| 7439-97-6 | Mercury | 0.21 | U | | |
| 7440-02-0 | Nickel | 34.60 | | | |
| 7440-09-7 | Potassium | 3370.00 | | | |
| 7782-49-2 | Selenium | 0.77 | UJ | | |
| 7440-22-4 | Silver | 3.40 | UJ | | |
| 7440-23-5 | Sodium | 583.00 | J | | |
| 7440-28-0 | Thallium | 4.20 | UR | | |
| 7440-62-2 | Vanadium | 42.20 | | | |
| 7440-66-6 | Zinc | 612.00 | J | | |
| | Cyanide | | | | |

JSM 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: FINE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

GRASS AND ROOTS

00010

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB608

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-10S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 58.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 20900.00 | | | |
| 7440-36-0 | Antimony | 7.00 | U | | |
| 7440-38-2 | Arsenic | 7.30 | | | |
| 7440-39-3 | Barium | 204.00 | | | |
| 7440-41-7 | Beryllium | 0.96 | J | | |
| 7440-41-7 | Cadmium | 0.96 | U | | |
| 7440-70-2 | Calcium | 11600.00 | | | |
| 7440-47-3 | Chromium | 31.40 | | | |
| 7440-48-4 | Cobalt | 9.80 | J | | |
| 7440-50-8 | Copper | 42.70 | J | | |
| 7439-89-6 | Iron | 22800.00 | | | |
| 7439-92-1 | Lead | 182.00 | J | | |
| 7439-95-4 | Magnesium | 7340.00 | | | |
| 7439-96-5 | Manganese | 591.00 | | | |
| 7439-97-6 | Mercury | 0.24 | | | |
| 7440-02-0 | Nickel | 15.30 | | | |
| 7440-09-7 | Potassium | 4140.00 | | | |
| 7782-49-2 | Selenium | 2.20 | UJ | | |
| 7440-22-4 | Silver | 2.90 | UJ | | |
| 7440-23-5 | Sodium | 468.00 | J | | |
| 7440-28-0 | Thallium | 2.40 | UR | | |
| 7440-62-2 | Vanadium | 36.60 | | | |
| 7440-66-6 | Zinc | 249.00 | J | | |
| | Cyanide | | | | |

JEM 4/14/88

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

SMALL STONES AND ROOTS

00611

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB609

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-113

Level (low/med): LOW Date Received: 02/13/88

% Solids: 55.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 20600.00 | | | |
| 7440-36-0 | Antimony | 7.60 | U | | |
| 7440-38-2 | Arsenic | 7.40 | | | |
| 7440-39-3 | Barium | 154.00 | | | |
| 7440-41-7 | Beryllium | 1.00 | J | | |
| 7440-41-7 | Cadmium | 1.00 | U | | |
| 7440-70-2 | Calcium | 6550.00 | | | |
| 7440-47-3 | Chromium | 27.00 | | | |
| 7440-48-4 | Cobalt | 10.40 | J | | |
| 7440-50-8 | Copper | 33.20 | J | | |
| 7439-89-6 | Iron | 24400.00 | | | |
| 7439-92-1 | Lead | 126.00 | J | | |
| 7439-95-4 | Magnesium | 6560.00 | | | |
| 7439-96-5 | Manganese | 533.00 | | | |
| 7439-97-6 | Mercury | 0.13 | U | | |
| 7440-02-0 | Nickel | 17.30 | | | |
| 7440-09-7 | Potassium | 3450.00 | | | |
| 7782-49-2 | Selenium | 0.47 | UJ | | |
| 7440-22-4 | Silver | 3.10 | UJ | | |
| 7440-23-5 | Sodium | 533.00 | J | | |
| 7440-28-0 | Thallium | 2.60 | UR | | |
| 7440-62-2 | Vanadium | 42.30 | | | |
| 7440-66-6 | Zinc | 244.00 | J | | |
| | Cyanide | | | | |

4/14/88

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

GRASS AND ROOTS

00012

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB610

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-12S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 78.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 14600.00 | | | |
| 7440-36-0 | Antimony | 5.20 | U | | |
| 7440-38-2 | Arsenic | 10.30 | | | |
| 7440-39-3 | Barium | 112.00 | | | |
| 7440-41-7 | Beryllium | 0.71 | J | | |
| 7440-41-7 | Cadmium | 0.71 | U | | |
| 7440-70-2 | Calcium | 4140.00 | | | |
| 7440-47-3 | Chromium | 17.00 | | | |
| 7440-48-4 | Cobalt | 7.00 | J | | |
| 7440-50-8 | Copper | 13.50 | J | | |
| 7439-89-6 | Iron | 19300.00 | | | |
| 7439-92-1 | Lead | 38.00 | J | | |
| 7439-95-4 | Magnesium | 6380.00 | | | |
| 7439-96-5 | Manganese | 395.00 | | | |
| 7439-97-6 | Mercury | 0.12 | U | | |
| 7440-02-0 | Nickel | 10.30 | | | |
| 7440-09-7 | Potassium | 2380.00 | | | |
| 7782-49-2 | Selenium | 1.60 | UJ | | |
| 7440-22-4 | Silver | 2.10 | UJ | | |
| 7440-23-5 | Sodium | 335.00 | J | | |
| 7440-28-0 | Thallium | 1.30 | UR | | |
| 7440-62-2 | Vanadium | 27.30 | | | |
| 7440-66-6 | Zinc | 196.00 | J | | |
| | Cyanide | | | | |

JEM 4/14/88

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

ROOTS

00013

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB615

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-138

Level (low/med): LOW Date Received: 02/13/88

% Solids: 72.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 9450.00 | | | |
| 7440-36-0 | Antimony | 4.90 | U | | |
| 7440-38-2 | Arsenic | 5.40 | | | |
| 7440-39-3 | Barium | 86.70 | | | |
| 7440-41-7 | Beryllium | 0.67 | J | | |
| 7440-41-7 | Cadmium | 0.67 | U | | |
| 7440-70-2 | Calcium | 11600.00 | | | |
| 7440-47-3 | Chromium | 13.00 | | | |
| 7440-48-4 | Cobalt | 5.40 | J | | |
| 7440-50-8 | Copper | 29.00 | J | | |
| 7439-89-6 | Iron | 14000.00 | | | |
| 7439-92-1 | Lead | 160.00 | J | | |
| 7439-95-4 | Magnesium | 4440.00 | | | |
| 7439-96-5 | Manganese | 282.00 | | | |
| 7439-97-6 | Mercury | 0.12 | U | | |
| 7440-02-0 | Nickel | 6.90 | J | | |
| 7440-09-7 | Potassium | 2010.00 | | | |
| 7782-49-2 | Selenium | 0.39 | J | | |
| 7440-22-4 | Silver | 2.00 | UJ | | |
| 7440-23-5 | Sodium | 462.00 | J | | |
| 7440-28-0 | Thallium | 1.90 | UR | | |
| 7440-62-2 | Vanadium | 21.50 | | | |
| 7440-66-6 | Zinc | 97.20 | J | | |
| | Cyanide | | | | |

JCM 4/14/88

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

LARGE STONES, GRASS AND ROOTS

00011

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB672

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-14S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 78.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15300.00 | | | |
| 7440-36-0 | Antimony | 4.30 | U | | |
| 7440-38-2 | Arsenic | 7.30 | J | | |
| 7440-39-3 | Barium | 119.00 | | | |
| 7440-41-7 | Beryllium | 0.77 | J | | |
| 7440-41-7 | Cadmium | 0.59 | U | | |
| 7440-70-2 | Calcium | 6450.00 | | | |
| 7440-47-3 | Chromium | 20.00 | | | |
| 7440-48-4 | Cobalt | 7.30 | J | | |
| 7440-50-8 | Copper | 18.90 | J | | |
| 7439-89-6 | Iron | 20000.00 | | | |
| 7439-92-1 | Lead | 58.10 | J | | |
| 7439-95-4 | Magnesium | 7760.00 | | | |
| 7439-96-5 | Manganese | 423.00 | | | |
| 7439-97-6 | Mercury | 0.16 | | | |
| 7440-02-0 | Nickel | 12.60 | | | |
| 7440-09-7 | Potassium | 2440.00 | | | |
| 7782-49-2 | Selenium | 0.32 | J | | |
| 7440-22-4 | Silver | 1.80 | UJ | | |
| 7440-23-5 | Sodium | 444.00 | J | | |
| 7440-28-0 | Thallium | 2.20 | UR | | |
| 7440-62-2 | Vanadium | 29.40 | | | |
| 7440-66-6 | Zinc | 116.00 | J | | |
| | Cyanide | | | | |

JEM 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

SMALL STONES. GRASS AND ROOTS

00015

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB673

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-155

Level (low/med): LOW Date Received: 02/13/88

% Solids: 83.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15300.00 | | | |
| 7440-36-0 | Antimony | 3.50 | U | | |
| 7440-38-2 | Arsenic | 7.20 | J | | |
| 7440-39-3 | Barium | 124.00 | | | |
| 7440-41-7 | Beryllium | 0.79 | J | | |
| 7440-41-7 | Cadmium | 0.48 | U | | |
| 7440-70-2 | Calcium | 4460.00 | | | |
| 7440-47-3 | Chromium | 17.80 | | | |
| 7440-48-4 | Cobalt | 7.20 | J | | |
| 7440-50-8 | Copper | 18.90 | J | | |
| 7439-89-6 | Iron | 17400.00 | | | |
| 7439-92-1 | Lead | 50.40 | J | | |
| 7439-95-4 | Magnesium | 6500.00 | | | |
| 7439-96-5 | Manganese | 475.00 | | | |
| 7439-97-6 | Mercury | 0.09 | U | | |
| 7440-02-0 | Nickel | 10.50 | | | |
| 7440-09-7 | Potassium | 2660.00 | | | |
| 7782-49-2 | Selenium | 0.27 | UJ | | |
| 7440-22-4 | Silver | 1.40 | UJ | | |
| 7440-23-5 | Sodium | 512.00 | J | | |
| 7440-28-0 | Thallium | 1.50 | UR | | |
| 7440-62-2 | Vanadium | 24.30 | | | |
| 7440-66-6 | Zinc | 126.00 | J | | |
| | Cyanide | | | | |

gsh 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

LARGE STONES

00016

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB674

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-16S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 78.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 16700.00 | | | |
| 7440-36-0 | Antimony | 4.10 | U | | |
| 7440-38-2 | Arsenic | 3.70 | | | |
| 7440-39-3 | Barium | 122.00 | | | |
| 7440-41-7 | Beryllium | 0.90 | J | | |
| 7440-41-7 | Cadmium | 0.55 | U | | |
| 7440-70-2 | Calcium | 5720.00 | | | |
| 7440-47-3 | Chromium | 15.90 | | | |
| 7440-48-4 | Cobalt | 7.70 | J | | |
| 7440-50-8 | Copper | 14.50 | J | | |
| 7439-89-6 | Iron | 19100.00 | | | |
| 7439-92-1 | Lead | 17.90 | J | | |
| 7439-95-4 | Magnesium | 6600.00 | | | |
| 7439-96-5 | Manganese | 420.00 | | | |
| 7439-97-6 | Mercury | 0.13 | U | | |
| 7440-02-0 | Nickel | 10.30 | | | |
| 7440-09-7 | Potassium | 2540.00 | | | |
| 7782-49-2 | Selenium | 0.43 | J | | |
| 7440-22-4 | Silver | 1.70 | UJ | | |
| 7440-23-5 | Sodium | 334.00 | J | | |
| 7440-28-0 | Thallium | 2.00 | UR | | |
| 7440-62-2 | Vanadium | 26.30 | | | |
| 7440-66-6 | Zinc | 116.00 | J | | |
| | Cyanide | | | | |

JEH 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

LARGE STONES AND ROOTS

00017

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB675

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-17S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 68.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 14300.00 | | | |
| 7440-36-0 | Antimony | 5.20 | U | | |
| 7440-38-2 | Arsenic | 8.40 | | | |
| 7440-39-3 | Barium | 114.00 | | | |
| 7440-41-7 | Beryllium | 0.70 | J | | |
| 7440-41-7 | Cadmium | 0.70 | U | | |
| 7440-70-2 | Calcium | 6970.00 | | | |
| 7440-47-3 | Chromium | 20.60 | | | |
| 7440-48-4 | Cobalt | 3.80 | J | | |
| 7440-50-8 | Copper | 32.40 | J | | |
| 7439-89-6 | Iron | 25900.00 | | | |
| 7439-92-1 | Lead | 33.10 | J | | |
| 7439-95-4 | Magnesium | 7070.00 | | | |
| 7439-96-5 | Manganese | 460.00 | | | |
| 7439-97-6 | Mercury | 0.11 | U | | |
| 7440-02-0 | Nickel | 13.20 | | | |
| 7440-09-7 | Potassium | 2890.00 | | | |
| 7782-49-2 | Selenium | 0.38 | UJ | | |
| 7440-22-4 | Silver | 2.10 | UJ | | |
| 7440-23-5 | Sodium | 428.00 | J | | |
| 7440-28-0 | Thallium | 2.10 | UR | | |
| 7440-62-2 | Vanadium | 26.90 | | | |
| 7440-66-6 | Zinc | 309.00 | J | | |
| | Cyanide | | | | |

JEM 4/14/88

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

LARGE STONES AND ROOTS

00018

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB676

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-18S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 66.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15000.00 | | | |
| 7440-36-0 | Antimony | 7.00 | J | | |
| 7440-38-2 | Arsenic | 8.50 | | | |
| 7440-39-3 | Barium | 161.00 | | | |
| 7440-41-7 | Beryllium | 0.72 | J | | |
| 7440-41-7 | Cadmium | 1.70 | | | |
| 7440-70-2 | Calcium | 7670.00 | | | |
| 7440-47-3 | Chromium | 44.20 | | | |
| 7440-48-4 | Cobalt | 10.90 | J | | |
| 7440-50-8 | Copper | 35.70 | J | | |
| 7439-89-6 | Iron | 35400.00 | | | |
| 7439-92-1 | Lead | 245.00 | J | | |
| 7439-95-4 | Magnesium | 6400.00 | | | |
| 7439-96-5 | Manganese | 617.00 | | | |
| 7439-97-6 | Mercury | 0.14 | U | | |
| 7440-02-0 | Nickel | 27.30 | | | |
| 7440-09-7 | Potassium | 2960.00 | | | |
| 7782-49-2 | Selenium | 1.60 | UJ | | |
| 7440-22-4 | Silver | 2.20 | UJ | | |
| 7440-23-5 | Sodium | 515.00 | J | | |
| 7440-28-0 | Thallium | 0.36 | UR | | |
| 7440-62-2 | Vanadium | 32.00 | | | |
| 7440-66-6 | Zinc | 610.00 | J | | |
| | Cyanide | | | | |

JEAH 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

LARGE STONES AND ROOTS

00019

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB681

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 3955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-19S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 77.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15600.00 | | | |
| 7440-36-0 | Antimony | 3.30 | U | | |
| 7440-38-2 | Arsenic | 5.10 | | | |
| 7440-39-3 | Barium | 151.00 | | | |
| 7440-41-7 | Beryllium | 0.72 | J | | |
| 7440-41-7 | Cadmium | 0.52 | U | | |
| 7440-70-2 | Calcium | 5410.00 | | | |
| 7440-47-3 | Chromium | 17.90 | | | |
| 7440-48-4 | Cobalt | 9.30 | | | |
| 7440-50-8 | Copper | 93.10 | J | | |
| 7439-89-6 | Iron | 20500.00 | | | |
| 7439-92-1 | Lead | 37.40 | J | | |
| 7439-95-4 | Magnesium | 7070.00 | | | |
| 7439-96-5 | Manganese | 447.00 | | | |
| 7439-97-6 | Mercury | 0.30 | | | |
| 7440-02-0 | Nickel | 14.40 | | | |
| 7440-09-7 | Potassium | 2400.00 | | | |
| 7782-49-2 | Selenium | 0.32 | UJ | | |
| 7440-22-4 | Silver | 1.60 | UJ | | |
| 7440-23-5 | Sodium | 273.00 | J | | |
| 7440-28-0 | Thallium | 2.00 | J | | |
| 7440-62-2 | Vanadium | 24.60 | | | |
| 7440-66-6 | Zinc | 177.00 | J | | |
| | Cyanide | | | | |

JEH 4/14/88

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: BROWN Clarity After: _____ Artifacts: YES

Comments:

LARGE STONES AND ROOTS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJB682

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 8955 SAS No.: SDG No.: MJB698

Matrix (soil/water): SOIL Lab Sample ID: 02019-20S

Level (low/med): LOW Date Received: 02/13/88

% Solids: 83.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 16600.00 | | | |
| 7440-36-0 | Antimony | 5.70 | J | | |
| 7440-38-2 | Arsenic | 7.00 | | | |
| 7440-39-3 | Barium | 127.00 | | | |
| 7440-41-7 | Beryllium | 0.34 | J | | |
| 7440-41-7 | Cadmium | 0.65 | U | | |
| 7440-70-2 | Calcium | 3610.00 | | | |
| 7440-47-3 | Chromium | 17.40 | | | |
| 7440-48-4 | Cobalt | 8.10 | J | | |
| 7440-50-8 | Copper | 88.90 | J | | |
| 7439-89-6 | Iron | 21900.00 | | | |
| 7439-92-1 | Lead | 143.00 | J | | |
| 7439-95-4 | Magnesium | 7500.00 | | | |
| 7439-96-5 | Manganese | 469.00 | | | |
| 7439-97-6 | Mercury | 0.19 | | | |
| 7440-02-0 | Nickel | 13.60 | | | |
| 7440-09-7 | Potassium | 2640.00 | | | |
| 7782-49-2 | Selenium | 0.33 | UJ | | |
| 7440-22-4 | Silver | 1.90 | UJ | | |
| 7440-23-5 | Sodium | 240.00 | J | | |
| 7440-28-0 | Thallium | 1.80 | UR | | |
| 7440-62-2 | Vanadium | 26.60 | | | |
| 7440-66-6 | Zinc | 156.00 | J | | |
| | Cyanide | | | | |

JEH 4/14/88

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

LARGE STONES

00021

FORM I - IN 7/87